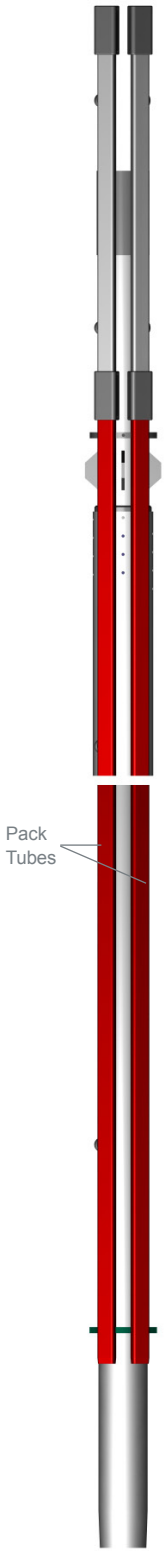
Cased-Hole Shunted Screen System



Weatherford's shunt-tube technology (STT) shunted screen system is designed to allow slurry to bypass sections that have bridged prematurely during gravel-pack or frac-pack operations. With multiple apertures located on the tubes in each screen, the slurry flows to all sections of the wellbore, ensuring a complete annular pack is achieved.

In the cased-hole STT system, shunt tubes are arranged on screen and blank pipe. Welded blade-type centralizers provide screen centralization for a more uniform pack and protect the STT against crushing or wear during installation.

The type of application determines whether a pack tube system (PTS) or frac tube system (FTS) is used. Slurry can be pumped at designed rates until initial screen-out. After screen-out, the PTS is capable of rates up to 2 bbl/min per tube. For higher flow rates or sand concentrations, the FTS can achieve rates up to 8 bbl/min per tube.

Built on Weatherford's conventional well screen products including UltraGrip™, *UltraGrip* HD, SuperFlo®, and ExcelFlo® screens, the STT system provides a wide range of options to meet specific well requirements. The STT system is specified as either a concentric or an eccentric configuration. An eccentric configuration increases base pipe size to reduce inflow pressure drop.

Applications

- High-rate gravel-pack and frac-pack completions
- High-angle wells (>40°)
- Long or deviated intervals, multi-zone completions
- Formations with large permeability variation

Features, Advantages and Benefits

- The SST system increases gravel-pack success and well life by using multiple tube apertures to eliminate voids caused by sand-bridging.
- Timed threads provide joint-to-joint alignment of pack or frac tubes, ensuring straightforward makeup of the shunted screen system.

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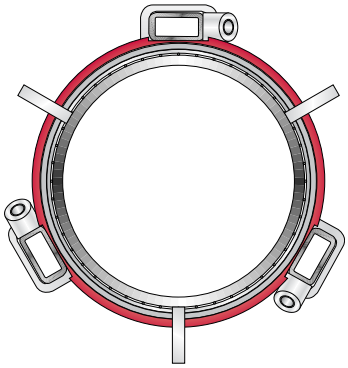
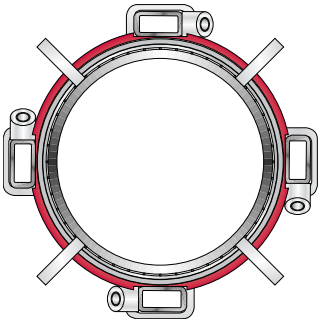
Features, Advantages and Benefits *(continued)*

- Shunt-tube configuration can be optimized to accommodate most gravel-pack and frac-pack pumping rates by changing the number of shunt tubes or changing from concentric to eccentric design to provide a fit-for-purpose system.
- Each shunt tube functions independently of the others. In the event a shunt tube becomes plugged or damaged, preventing fluid from passing, the other shunt tubes continue to transport the slurry to ensure a successful annular pack.



3 PTS / 3 FTS



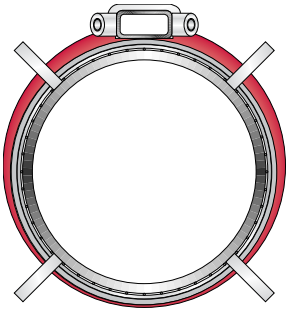
4 PTS / 4 FTS

Specifications

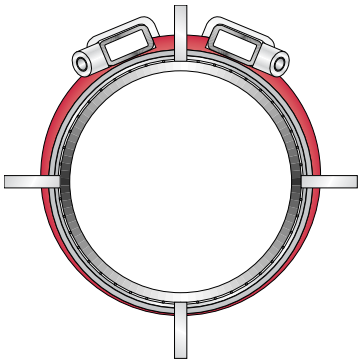
Concentric Cased-Hole Shunted Screen System with UltraGrip™ Screens					
Base Pipe Size (in./*mm*)	Screen OD (in./*mm*)	Pack Tube System Maximum OD* (in./*mm*)		Frac Tube System Maximum OD* (in./*mm*)	
		3 PTS	4 PTS	3 FTS	4 FTS
3.500 *88.9*	3.910 *99.4*	5.57 *141.5*		6.17 *156.6*	
4.000 *101.6*	4.420 *112.2*	6.06 *154.0*		6.65 *168.9*	
4.500 *114.3*	4.920 *125.0*	6.58 *167.1*		7.16 *181.8*	
5.000 *127.0*	5.410 *137.4*	7.07 *179.7*		7.65 *194.3*	
5.500 *139.7*	5.910 *150.1*	7.58 *192.5*		8.15 *207.0*	
6.625 *168.3*	7.030 *178.7*	8.70 *221.0*		9.27 *235.3*	

* Maximum OD dimension does not include configurable centralizer OD

Cased-Hole Shunted Screen System



1 PTS / 1 FTS



2 PTS / 2 FTS

Specifications

Eccentric Cased-Hole Shunted Screen System with UltraGrip™ Screens					
Base Pipe Size (in./*mm*)	Screen OD (in./*mm*)	Pack Tube System Maximum OD* (in./*mm*)		Frac Tube System Maximum OD* (in./*mm*)	
		1 PTS	2 PTS	1 FTS	2 FTS
2.375 *60.3*	2.780 *70.5*	3.82 *97.0*	4.15 *105.3*	4.16 *105.7*	4.74 *120.4*
2.875 *73.0*	3.280 *83.4*	4.28 *108.7*	4.49 *114.1*	4.60 *116.9*	5.01 *127.3*
3.500 *88.9*	3.910 *99.4*	4.87 *123.6*	5.04 *128.0*	5.17 *131.3*	5.46 *138.6*
4.000 *101.6*	4.420 *112.2*	5.36 *136.1*	5.50 *139.7*	5.66 *143.8*	5.85 *148.6*
4.500 *114.3*	4.920 *125.0*	5.87 *149.2*	5.93 *150.7*	6.17 *156.8*	6.29 *159.8*
5.000 *127.0*	5.410 *137.4*	6.37 *161.8*	6.42 *163.0*	6.67 *169.3*	6.77 *171.9*
5.500 *139.7*	5.910 *150.1*	6.88 *174.7*	6.92 *175.7*	7.17 *182.1*	7.26 *184.4*
6.625 *168.3*	7.030 *178.7*	8.00 *203.3*	8.04 *204.2*	8.29 *210.5*	8.37 *212.6*

* Maximum OD dimension does not include configurable centralizer OD

Cased-Hole Shunted Screen System

Options

- STT: Inflow system (IS), bottom joint adaptor
- Well screen types: UltraGrip™ HD, *UltraGrip*, Superflo®, Excelflo®,
- Screen metallurgy: 316L, INCOLOY® 825
- Pipe metallurgy: API grades, all chrome grades, duplex steel
- Outer shroud can be customized for distributed temperature sensing (DTS) equipment
- Specialty systems and metallurgies available upon request to meet specific completion criteria.

For Internal Use

Link to Endeca assembly part numbers: Cased Hole Shunt Screen System

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